REMARKS

The following Remarks are made in response to the Final Office Action mailed on September 25, 2001, in which claims 20-39 were rejected. With this Amendment, claims 20, 28, 34, and 35 have been amended to more particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claims 20-39, therefore, remain pending in the Application and are presented for reconsideration and allowance.

Telephonic Examiner Interview

Applicant thanks the Examiner for the courtesies extended to Applicant's representative, Scott A. Lund, during a telephonic interview conducted on November 19, 2001 during which the Examiner's interpretation and Applicant's understanding of the Kim U.S. Patent No. 6,128,117 was discussed, during which the above-amendments to the claims were discussed, and during which the Examiner agreed that the above-amendments to the claims overcome the art of record.

Claim Rejections under 35 U.S.C. § 103

The Examiner has rejected claims 20, 21, and 25-31 under 35 U.S.C. 103(a) as being unpatentable over the Kim U.S. Patent No. 6,128,117 in view of the Sedlmayr U.S. Patent No. 6,034,818. The Examiner has rejected claims 22-24 and 32-39 under 35 U.S.C. 103(a) as being unpatentable over the Kim patent in view of the Sedlmayr patent as applied to claims 20, 21, and 25-31 above and further in view of the Kawakami et al. U.S. Patent No. 5,848,203.

With this Amendment, independent claims 20, 28, and 34 have been amended to clarify that the optical transducer is adapted to transmit and receive information optically. In addition, independent claim 20 has been amended to clarify that the transmit light pipe is adapted to optically transmit information optically transmitted by the optical transducer from the optical transducer to the optical data port and that the receive light pipe is adapted to optically receive information via the optical data port and optically transmit the received information to the optical transducer. Furthermore, independent claim 28 has been amended to clarify that the method of optically coupling the optical transducer with the optical data port includes optically transmitting the received light rays to the optical transducer from the second end of the receive light pipe.

The Examiner contends that the Kim patent teaches a device adapted to optically exchange information between an optical transducer and an optical data port. The Kim patent discloses an infrared controller 34 and an infrared transceiver or interface port 50 connected to the infrared controller 34 by data signal lines 54 and 56 (Figure 2; col. 4, lines 1-11). As such, the Examiner contends that the infrared controller 34 of the Kim patent is an optical transducer. The infrared controller 34 of the Kim patent, however, receives electrical signals from infrared transceiver 50 via data signal lines 54 and 56. Thus, the infrared controller 34 of the Kim patent does not constitute an optical transducer adapted to transmit and receive information optically, as claimed in independent claims 20, 28, and 34. Accordingly, the Kim patent does not teach a device adapted to optically exchange information between an optical transducer and an optical data port, as asserted by the Examiner.

With respect to the Kim, Sedlmayr, and Kawakami et al. patents, none of these patents, individually or in combination, teach or suggest a light pipe assembly adapted to optically exchange information between an optical transducer adapted to transmit and receive information optically and an optical data port, as claimed in claim 20, a method of optically coupling an optical transducer adapted to transmit and receive information optically with an optical data port, as claimed in independent claim 28, nor an optical interlink including an optical transducer adapted to transmit and receive information optically, as claimed in independent claim 34. Thus, modifying the Kim patent by the Sedlmayr patent, in the manner suggested by the Examiner, would not overcome the shortcomings of the Kim patent and, therefore, would not result in the present invention. Applicant, therefore, submits that the combination of the Kim and Sedlmayr patents does not teach or suggest the present invention as claimed in independent claims 20 and 28 and that the combination of the Kim, Sedlmayr, and Kawakami et al. patents does not teach or suggest the present invention as claimed in independent claim 34.

In view of the above, Applicant submits that independent claims 20, 28, and 34 are patentably distinct from the Kim, Sedlmayr, and Kawakami et al. patents, and, therefore, are in condition for allowance. Furthermore, as dependent claims 21-27 further define patentably distinct claim 20, dependent claims 29-33 further define patentably distinct claim 28, and dependent claims 35-39 further define patentably distinct claim 34, Applicant submits that dependent claims 21-27, 29-33, and 35-39 are also in condition for allowance. Applicant,

therefore, respectfully requests that the rejection of claims 20-39 under 35 U.S.C. § 103(a) be reconsidered and withdrawn and that claims 20-39 be allowed.

CONCLUSION

In view of the above, Applicant respectfully submits that pending claims 20-39 are all in condition for allowance and requests reconsideration of the application and allowance of all pending claims.

Attached hereto is a marked-up version of the changes made to the specification and/or the claims by the current Amendment. The attached pages are captioned **"VERSION WITH MARKINGS TO SHOW CHANGES MADE"**.

Any inquiry regarding this Amendment and Response should be directed to Anthony Baca at Telephone No. (208) 396-3597, Facsimile No. (208) 396-3958. In addition, all correspondence should continue to be directed to the following address:

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Nov. 20, 2001
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EXPEDITED PROCEDURE
Examining Group Number 2854

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Curtis Gregory Kelsay	Examiner:	Kevin D. Williams
Serial No.:	09/491,994	Art Unit:	2854
Filed:	January 26, 2000	Docket No.:	10990356-1
Title:	AN OPTICAL INTERLINK BETWEEN AN OPTICAL TRANSDUCER AND OPTICAL DATA PORT		

AMENDMENT AND RESPONSE UNDER 37 C.F.R. 1.116

Box AF
Commissioner for Patents
Washington, D.C. 20231

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Dear Sir/Madam:

This Amendment and Response is in reply to the Final Office Action mailed on September 25, 2001. Please amend the above-identified patent application as follows:

IN THE CLAIMS

Please amend claims 20, 28, 34, and 35 as follows:

Claims 1-19 Cancelled.

20. (Amended) A light pipe assembly adapted to optically exchange information between an optical transducer adapted to transmit and receive information optically and an optical data port, the light pipe assembly comprising:

a transmit light pipe adapted to optically transmit information optically transmitted by the optical transducer from the optical transducer to the optical data port; and

a receive light pipe adapted to optically receive information via the optical data port and optically transmit the received information to the optical transducer.

21. The light pipe assembly of claim 20, wherein a first end of the transmit light pipe is adapted to be optically coupled to the optical transducer and a second end of the transmit light pipe is adapted to provide a portion of the optical data port.

22. The light pipe assembly of claim 21, further comprising:

a first lens provided between the first end of the transmit light pipe and the optical transducer, wherein the first lens is adapted to optically couple the optical transducer to the transmit light pipe and collimate light received from the optical transducer into the first end of the transmit light pipe; and

a second lens provided at the second end of the transmit light pipe, wherein the second lens is adapted to increase an angle of light exiting the optical data port.

23. The light pipe assembly of claim 22, wherein the first lens and the second lens of the transmit light pipe are formed as part of the transmit light pipe.

24. The light pipe assembly of claim 22, wherein the angle of light exiting the optical data port is adapted to diverge from the optical data port.

25. The light pipe assembly of claim 20, wherein a first end of the receive light pipe is adapted to be optically coupled to the optical transducer and a second end of the receive light pipe is adapted to provide a portion of the optical data port.

26. The light pipe assembly of claim 25, further comprising:

a first lens provided between the first end of the receive light pipe and the optical transducer, wherein the first lens is adapted to optically couple the receive light pipe to the optical transducer; and

a second lens provided at the second end of the receive light pipe, wherein the second lens is adapted to collimate light received at the optical data port into the second end of the receive light pipe.

27. The light pipe assembly of claim 26, wherein the first lens and the second lens of the receive light pipe are formed as part of the receive light pipe.

28. (Amended) A method of optically coupling an optical transducer <u>adapted to transmit and receive information optically</u> with an optical data port, the method comprising the steps of:

receiving light rays at the optical data port;

collimating the received light rays into a first end of a receive light pipe;

optically transmitting the received light rays within the receive light pipe from the first end of the receive light pipe to a second end of the receive light pipe;

optically transmitting the received light rays to the optical transducer from the second end of the receive light pipe; and

receiving the received light rays at the optical transducer.

29. The method of claim 28, wherein the step of collimating the received light rays includes passing the received light rays through a lens at the first end of the receive light pipe.

30. The method of claim 28, further comprising the steps of:

transmitting light rays from the optical transducer;

collimating the transmitted light rays into a first end of a transmit light pipe;

optically transmitting the transmitted light rays within the transmit light pipe from the first end of the transmit light pipe to a second end of the transmit light pipe; and

distributing the transmitted light rays from the second end of the transmit light pipe.

31. The method of claim 30, wherein the step of distributing the transmitted light rays includes exiting the transmitted light rays from the optical data port.

32. The method of claim 31, wherein exiting the transmitted light rays from the optical data port includes increasing an illumination angle of the transmitted light rays exiting from the optical data port.

33. The method of claim 32, wherein increasing the illumination angle of the transmitted light rays includes passing the transmitted light rays through a lens at the second end of the transmit light pipe and diverging the transmitted light rays exiting from the optical data port.

34. (Amended) An optical interlink, comprising:

an optical transducer adapted to ~~optically exchange information~~transmit and receive information optically;

a light pipe having a first end optically coupled to the optical transducer and a second end arranged to provide an optical data port; and

at least one of a transmit lens adapted to increase an angle of illumination of light exiting the optical data port and a receive lens adapted to collimate light into the light pipe.

35. (Amended) The optical interlink of claim 34, ~~wherein the optical transducer is adapted to transmit and receive information optically, and~~ wherein the light pipe provides bi-directional communication between the optical transducer and the optical data port.

36. The optical interlink of claim 34, wherein the optical transducer includes an infra-red transducer.

37. The optical interlink of claim 34, wherein the optical transducer includes a receive portion and a transmit portion, and wherein the light pipe includes a receive light pipe optically coupled to the receive portion of the optical transducer and a transmit light pipe optically coupled to the transmit portion of the optical transducer.

38. The optical interlink of claim 37, wherein the optical interlink includes the transmit lens and the receive lens, wherein the transmit lens is adapted to increase the angle of illumination of light from the transmit light pipe and the receive lens is adapted to collimate light into the receive light pipe.

39. The optical interlink of claim 34, wherein the optical interlink is configured to optically exchange information for a printer, wherein the optical transducer and the light pipe are disposed within the printer and wherein the light pipe is adapted to optically exchange information with the optical transducer and externally of the printer.